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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/568,751	02/21/2006	Franz-Josef Koerber	1034193000040	6674

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EXAMINER	
LUO, DAVID S	

ART UNIT	PAPER NUMBER
2837	

NOTIFICATION DATE	DELIVERY MODE
05/04/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/568,751	KOERBER, FRANZ-JOSEF	
	Examiner	Art Unit	
	DAVID S. LUO	2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 February 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *2/21/2006, 06/10/2008*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

2. Claim 1, 5-6, and 13-14 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6, 693,247 to Byers.

As to claim 1, 5-6, and 13-14, Byers teaches an apparatus for actuating an high-voltage power breaker(Byers fig. 1G and col. 2: lines 2-15) and having at least one moving contact piece (Byers fig. 1G: 124, 126 "movable contacts"), the at least one moving contact piece (Byers fig. 1G: 124, 126 "movable contacts" and col. 7: lines 9-17) being driven via a rotating shaft, wherein an electric motor having a rotating drive shaft, which can be coupled to the rotating shaft for the switching device by means of a gear mechanism, is provided for the purpose of driving the rotating shaft (Byers fig. 1A: & fig. 1G: and col. 7: lines 9-17 "the movable insulating panel is supported by and rotates around the common steel shaft 110 that supports the Geneva gear 108. The insulating panel 122 has the drive slot 120 at one end and at the other end supports two electrical movable contacts 124, 126").

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 2-6, 11-14 and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,693,247 to Byers, and further in view of U.S. Patent No. 4,623,859 to Erickson.

Regarding claim 2, Byers teaches an apparatus as claimed in claim 1. Byers does not teach a multi-pole switching devices. Erickson discloses the apparatus wherein, in the case of multi-pole switching devices, an electric motor is provided for the purpose of driving all of the switch poles (col. 6, lines 28-52).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Erickson into Byers as Byers suggests that the tap changer may be used for controlling the voltage of a single phase voltage regulator or of a three phase transformer (Byers col. 1: lines 65-67).

Regarding claim 3, Erickson discloses the apparatus wherein, in the case of multi-pole switching devices, a separate electric motor is provided for the purpose of driving each switch pole (col. 6, lines 28-52).

Regarding claims 4 and 12, Erickson discloses (Fig. 2) the apparatus wherein the central axis of the drive shaft 78 runs parallel to the central axis of the rotating shaft 88. This is accomplished when the rotating shaft is actuated.

Regarding claims 11 and 19-20 Erickson discloses (Fig. 2) at least one apparatus for actuating purposes (e.g. 156 or 70 or 88).

5. Claims 7 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Erickson.

Erickson discloses the apparatus wherein the lever mechanism is dimensioned such that a rotation of the drive shaft of the electric motor through a certain amount brings about a switching operation of the switching device, however, does not expressly disclose this amount being at most 180°. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the lever mechanism dimensioned such that a rotation of the drive shaft of the electric motor through at most 180° would bring about a switching operation of the switching device, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working range involves only12 routine skill in the art. In re Aller, 105 USPQ 233

6. Claims 9-10, 17-18 and 21-22 rejected under 35 U. S.C. 103(a) as being unpatentable over Erickson as applied to claims 1-2 and 9 above, and further in view of USPN 6787937 (hereinafter Mody).

Regarding claims 9 and 17, Erickson discloses the limitations of claims 1-2 and 9 as noted above, however does not expressly disclose the gear mechanism being in the form of a tooth belt drive. At the time the claimed invention was made, it would have been obvious to a person of ordinary skill in the art to have the gear mechanism be in the form of a tooth belt drive. The motivation for this comes from the fact that Mody discloses a method of operating a remote operated circuit breaker panel and specifically discloses that the actuators could have been employed differently, such as through the use of a belt driver actuator or tooth belt drive (col. 4, lines 22-30). This would have allowed for a simplification of the design as well as in increase in efficiency.

Regarding claims 10, 18 and 21-22, it would have been obvious to one of ordinary skill in the art at the time the invention was made to operate the toothed belt drive with a transmission ration of 1:1 to 1:6 or of 1:3.5, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working range involves only routine skill in the art. In re Aller, 105 USPQ 233.

Response to Arguments

7. Applicant's arguments filed 02/02/2009 have been fully considered but they are not persuasive. Further, in view of applicant's amendment of claim 1, the newly amendeded "high-voltage power breaker" limitation is a quantitative and non-structural limitation in comparison with the original limitation "electrical switching device", which means the only difference between the newly amended limitation and the original limitation is the amount of voltage used

for the power distribution equipment. The examiner's response below has addressed the issue. Thus, applicant's amendment and arguments can not obviate and overcome examiner's rejection of claims 1-22 as set forth in the Office action dated 10/1/2008. The rejection of claims 1-22 is maintained.

Applicant argues:

Byers discloses that the load tap changer can be used in applications providing voltage ratings between 2400 volts and about 35000 volts for 60 Hz and 50Hz systems. The tap changer has a frequency up to some time in second between two tap steps. Most notably, the tap changer design does not appear to have the structural capacity to switch a high-voltage power breaker within 10 ms. As a result, the tap changer design has much different drive requirements than Applicants' claimed apparatus.

High-voltage power breakers are used for voltage levels of 1 l0kV and higher. They have to be able to switch off also short circuit currents, which can amount l00kA and higher. Due to the high mechanical forces which will rise with such high currents and to avoid problems of the dynamic stability of the grid, the switching off of the short circuit current has to be done within some few l0ms.

Examiner's response:

Byers teaches a load tap changer for high power, high voltage systems such as a hydroelectric dam or a coal or nuclear fired generating station (Byers col. 1: lines 17-34). Even though the load tap changer is used to switch the loads (with medium to high AC voltage and high AC current) for a secondary winding of the high voltage power transformer, the method

disclosed by Byers can be used to all kinds of high voltage power distribution equipment as the method of switching of three phase AC power from the load side can be used to the switching of three phase AC power from the power supply side, and both of them are called as power distribution.

Byers also teaches a method of preventing a short circuit and interrupting the arc before contact is made between the movable and stationary contacts, and the time needed for the switching off the short circuit is one and one half cycle (which is calculated to be 25 ms assuming the AC power frequency is 60Hz) per Byers col. 10: lines 21-29.

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Conclusion

9. **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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